CONSERVATION LAW FOUNDATION

August 12, 2010

Via Electronic Mail: doer.biomass@state.ma.us

Philip Giudice, Commissioner
Massachusetts Department of Energy Resources
100 Cambridge St., Suite 1020
Boston, MA 02114

Re: Initial Comments on Biomass RPS Policy/Rule Revisions

Dear Commissioner Giudice:

The Conservation Law Foundation ("CLF") is pleased to submit these comments on the new regulations and policies under development by the Department of Energy Resources ("Department") regarding biomass eligibility pursuant to the Massachusetts Renewable Energy Portfolio Standard ("RPS").

As an initial matter, CLF applauds Secretary of Energy and Environmental Affairs Ian Bowles and the Department for commissioning the biomass sustainability study led by the Manomet Center for Conservation Sciences (the "Manomet Study") and for laying out a robust framework for responsible biomass policies under the Massachusetts RPS in the Secretary's July 7, 2010 letter (the "July 7 letter"). The directive in the July 7 letter draws upon the mandates of the Massachusetts Global Warming Solutions Act ("GWSA") and the results of the Manomet Study, and appropriately calls for revisions to the biomass RPS regulations in three key areas: (i) requiring eligible biomass facilities to be highly efficient, ensuring that maximum energy value is extracted from the resources that are utilized; (ii) requiring lifecycle greenhouse gas ("GHG") accounting and setting stringent GHG limits; and (iii) ensuring that biomass fuels will be sustainably harvested, consistent with the protection of forests and other ecosystems. We also appreciate that the directive reaffirms that contaminated construction and demolition ("C&D") debris is not an eligible biomass fuel under the RPS.

The following comments briefly touch upon each of these issues and address the questions posed by the Department in connection with the public meetings held on July 27 and 28.

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Background:

From the outset, the Massachusetts RPS program expressly intends to ensure that only cleaner and more advanced biomass facilities are rewarded with renewable energy incentives. Massachusetts General Laws chapter 25A, § 11F requires eligible facilities to have "low emissions" and to employ "advanced biomass power conversion technology." The Massachusetts RPS, however, was enacted before the immediacy and full extent of concerns over climate change had risen to the forefront, and the existing RPS regulations do not address GHG emissions. Because biomass energy, depending on how it is used, can either be part of the climate change problem or part of a diverse package of solutions, it is essential to now correct this longstanding regulatory omission. The urgent need to reduce GHG emissions on the order of 25% below 1990 levels by 2020 and at least 80% below 1990 levels by 2050 is now well documented, and such targets have been in place as mandates pursuant to the GWSA since 2008. Even if the Massachusetts RPS did not specifically require eligible biomass to have "low emissions," the Department would have been authorized, and indeed obliged, to modify the biomass regulations consistent with the GWSA. The "low emissions" mandate underscores the need to embrace strong GHG reduction requirements for eligible biomass, in addition to strict limits on particulate matter and other pollutants.

The requirement for eligible biomass facilities to employ "advanced biomass power conversion technology" similarly has not been adequately implemented as of yet. The inefficient stoker combustion and bubbling fluidized bed power conversion technologies that currently qualify for the RPS hardly can be said to be "*advanced* power conversion" technologies any longer. The release of the Manomet Study's results, which reflect the significant GHG reduction benefits of utilizing far more efficient technologies that are commercially available today, provides an important opportunity and foundation for updating this aspect of the biomass/RPS regulations as well.

Energy efficiency:

The July 7 letter appropriately calls for eligibility to be limited to facilities that are designed, constructed and operated to achieve maximum practicable efficiency – namely, combined heat-and-power (CHP) units or facilities having comparable efficiency and emissions performance. Although some industry stakeholders have questioned whether a minimum efficiency standard is appropriate for biomass facilities under the Massachusetts RPS, there is ample justification for adopting such a standard. First, as John Gunn from the Manomet team explained at the July 27 public meeting in Boston, efficiency goes hand-in-hand with reducing GHG emissions. The Manomet Study reflects that the more efficiently the biomass resources are utilized, the better the GHG emissions profile will be because fewer emissions are produced per unit of useful energy consumed: "Replacement of fossil fuels in thermal or combined heat and power (CHP) applications typically has lower initial carbon debts than is the case for utility-scale biomass electric plants because the thermal and CHP technologies achieve greater relative efficiency in converting biomass to useable energy." Manomet Study at p. 7.

Adopting a specific (numeric) minimum efficiency standard of 60% (or higher) is necessary to ensure that eligible facilities will maximize production of useful energy while minimizing greenhouse gas emissions. A minimum of 60% efficiency also would be consistent with the Massachusetts Green Communities Act goal of promoting CHP that is at least 60% efficient,

rising to a goal of 80% efficiency by 2020. *An Act Relative to Green Communities,* St. 2008 c. 169, § 116. Importantly, as the Manomet Study reflects, such technology is commercially available today.

Moreover, adopting a specific numeric minimum efficiency standard will lend predictability to the regulations. Setting a strong "floor" on efficiency of at least 60% and ratcheting that floor up over time also will help ensure that infrastructure receiving renewable energy incentives in the coming decade – and which can be expected to endure for decades to come – will be more likely to be consistent with the Commonwealth's longer-term GHG reduction requirements under the GWSA.

Lifecycle GHG accounting and limits:

The July 7 letter calls for the biomass/RPS regulations to be revised to require full lifecycle GHG accounting, based on the understanding that biomass should be "debited" for emissions associated with power conversion but also may accrue "dividends" that offset these debits when GHGs are taken out of the atmosphere. The directive also appropriately calls for eligible biomass facilities to demonstrate a 50% reduction in emissions as compared to (i) a combined cycle natural gas plant, on the electric side, and (ii) the thermal unit being replaced or, if the thermal load is new, a new natural gas heating unit, on the thermal side.

There are a growing number of precedents for such lifecycle carbon accounting, including the California Air Resource Board's Low Carbon Fuel Standard program, the United States EPA's regulations implementing the federal Renewable Fuels Standard program, the European Union's biofuels and renewable energy policies, as well as Massachusetts' own Clean Energy Biofuels Act that was adopted in 2008 ("Biofuels Act"). The GHG accounting and reduction mandate in the July 7 letter is analogous to the requirements of the Biofuels Act, which similarly calls for a 50% reduction in GHG emissions from eligible biofuels as compared to the dominant fuel (in that case, petroleum).

We believe the GHG accounting protocols presented in the July 7 letter strike a reasonable balance in calling for lifecycle GHG accounting over a 20 year period of time, a 50% reduction in GHG emissions as compared to natural gas (or, on the thermal side, whatever fuel is being replaced), and specifying that credit (or dividends) can only be claimed for "additional" carbon that is sequestered. Although California and the U.S. EPA have utilized a 30-year time frame for similar GHG accounting, the 20-year time frame used by the European Union is more appropriate for ensuring greater consistency with the GWSA's short-term GHG reduction mandates. At the same time, a 20-year time frame will still allow sufficient flexibility for carbon "dividends" to accrue and be credited even if they occur well beyond 2020, for example. And a shorter time horizon for carbon accounting will place greater emphasis on avoidance of GHG emissions over the short term, which is important because of the cumulative effects of GHG emissions and the greater value of avoiding emissions now versus avoiding emissions later in time.

Fuel harvesting standards to ensure forest ecosystem sustainability:

The foregoing efficiency and GHG accounting protocols are essential components of sound policy regarding eligibility for biomass incentives under the Massachusetts RPS. They are not sufficient in and of themselves to ensure the protection of the ecological health of our forests in

the face of increasing development pressure and emerging competing markets for woody biomass resources to meet needs for electricity, heat and liquid fuels. In addition to all of the other "ecosystem services" provided by our forests, they also are critically important carbon sinks, absorbing approximately ten percent of the total GHG emissions produced by the entire Commonwealth each year. Successful implementation of the GWSA thus requires strong measures to ensure No Net Loss of forest carbon sequestration capacity so that the carbon sink capacity of our forests is not diminished. It is therefore essential that biomass incentives under the RPS are available only for sustainably produced biomass fuels.

As the Manomet Study explicitly recognizes, the existing Massachusetts forest cutting plans unfortunately are insufficient to ensure the ecological health and long term protection of our forests. Woody biomass fuels thus only should be eligible under the RPS if they have been harvested consistently with sustainable fuel standards established by the Department in consultation with the Department of Conservation and Recreation ("DCR") and in accordance with sufficiently detailed site specific resource management plans. The Manomet study results conclusively establish that the lifecycle of the biomass being used and the way landowners choose to manage their forests directly influence the greenhouse gas impacts on the atmosphere of using woody biomass.

From a pure GHG accounting perspective, one might (erroneously) conclude that it may make sense to utilize for bioenergy all tree tops and limbs that otherwise would be left behind in the forest to decay after merchantable timber is harvested. However, the long-term ecological health of forests – including the preservation of their robust GHG uptake capacity – requires that a significant proportion of this material remain in the forest. The Manomet Study recognizes the importance of retaining dead wood (including standing dead trees) in forests in order to protect habitat and biodiversity and to replenish soil nutrients. The July 7 letter's directive to allow the use of no more than 50% of tree tops and limbs is consistent with the Manomet Study's findings and should be adopted in the revised biomass/RPS regulations.

C&D debris exclusion:

There are a variety of reasons why C&D debris should not be eligible as a biomass fuel under the RPS, and we appreciate that the July 7 letter reaffirms that this material is ineligible. First, C&D debris is not renewable. Moreover, in terms of reducing lifecycle GHG emissions, reuse, reduction and recycling of this material must continue to be prioritized over "energy recovery." In addition, there are serious concerns regarding pollutants such as heavy metals and dioxins that are released when C&D debris is combusted or otherwise used to produce energy. As of yet, there are no proven and reliable front-end (i.e., sorting) or back-end (i.e., emissions control) technologies to ensure that C&D debris can be used as a fuel in a facility having "low emissions" as the RPS requires.

Questions raised in connection with the public meetings:

Woody biomass has the potential to be utilized in numerous energy markets. How should DOER assure full and best use to reduce GHG emissions (scale, efficiency, technology, geographical limits)?

As discussed above, it is imperative that the revised biomass/RPS regulations include a requirement that eligible facilities be CHP units with a minimum efficiency of 60%, or

alternative technology that achieves the same performance standard. Demand is growing for bioenergy for electricity, heating and transportation fuel feedstocks, yet sustainable bioenergy resources are finite and cannot meet all of our needs. Indeed, the Manomet Study's assessment of the limited supply of potential additional biomass fuel from Massachusetts' forest is sobering, even if it does not encompass *all* potential sources of bioenergy. As such, it is particularly important to ensure that maximum energy value is extracted from the bioenergy resources that are utilized.

It is also very important to keep in mind that Class I of the RPS is designed to foster the development and deployment of new renewable energy technology, for which such facilities can be expected to endure for decades. The Department should adopt strong efficiency standards now, ratcheting up further over time, to ensure that these facilities not only will be compatible with the Commonwealth's near-term GHG reduction goals but also with the longer-term GWSA mandate that is far more stringent.

GHG emissions vary considerably with different types of biomass feedstock. How should DOER categorize wood markets to reflect the differences in emissions?

Much of the public debate thus far, particularly at the July 27 and 28 public meetings, has centered on the important category of materials referred to as "residues." It will be critically important for the revised biomass/RPS regulations to clearly define this term, since residues will have fundamentally different lifecycle GHG emission profiles than wood or other resources harvested specifically for biomass. To lend predictability and limit opportunities for gaming the definition of residues, this category of material also appropriately should be subject to specific limits such as the July 7 letter's 15% cap, by weight, on harvested sawtimber, and 50% limit on tops and branches that may be treated as "residues" for the purpose of carbon accounting. To verify and monitor compliance with limits applicable to the use of "residues," approved site specific resource management plans should be required for wood fuel source areas.

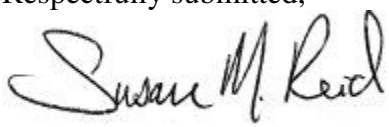
New regulations and policies will influence the development of any proposed biomass facility. How should DOER treat existing electrical generation plants currently receiving RECs?

Existing biomass electric generation plants receiving RECs must be brought into compliance with the revised biomass regulations. While there is a tension between providing longer term predictability with respect to renewable energy incentive programs and ensuring that program objectives are met, the sobering reality is that the RPS rules to date implicitly have treated biomass as "carbon neutral" *per se*, based on earlier misconceptions that have been disproven by more recent and thorough analysis. Particularly given that the Massachusetts GWSA requires significant reductions in emissions by 2020 and 2050, and that emissions associated with power sold into Massachusetts from outside the Commonwealth's borders are fully included under the GWSA's mandate, it is clear that the rules must be applied to the biomass facilities that have benefitted from incentives for years without having to demonstrate that their fuel supply is sustainable or that their lifecycle GHG emissions are low. In order to avoid abrupt changes, the Commonwealth might consider a relatively short "sunset period" that would allow facilities to adjust to the changes to the Massachusetts biomass/RPS regulations (e.g., by modifying their facilities or feedstocks, or by seeking eligibility pursuant to other programs).

Conclusion:

The July 7 letter provides a sound framework for adapting the Massachusetts biomass/RPS regulations to ensure they are consistent with other compelling policy goals and statutory mandates. CLF looks forward to continuing to work with the Department and other stakeholders to develop new regulations governing the eligibility of biomass pursuant to the RPS and consistent with emerging science on biomass carbon accounting, the Commonwealth's greenhouse gas reduction mandates, and the protection of our forest ecosystems and public health.

Respectfully submitted,



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